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EXAMINER	
OCAMPO, MARIANNE S	
ART UNIT	PAPER NUMBER
1723	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/005,856	ZUK, PETER	
	Examiner	Art Unit	
	Marianne S. Ocampo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *58-121* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *69-79,95-105 and 119* is/are allowed.

6)☒ Claim(s) *58-63,68,80-85,92-94,106,109,110,112-118,120 and 121* is/are rejected.

7)☒ Claim(s) *64-67,86-91,107,108 and 111* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The proposed drawing changes filed on 2-3-04 have not been approved. In particular, with respect to figures 9 and 13b of the proposed drawing sheets, there are still remaining drawing objections which need correction. See below for objections to drawings.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "59" has been used to designate both the outside wall, as shown in fig. 9 (in sheet 9/24) and dimension (space) between the funnel stop (36) and the base (1), as in fig. 13b. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 93 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place it in proper dependent form, or rewrite the claim in independent form. . In claim 93, it seems that the applicant is actually not claiming additional structural limitations of the filtration apparatus as set forth in the previous claim 92, but a method

of using the vacuum filtration apparatus according to claim 92. Claim 93 actually involves the method steps of using the vacuum filtration apparatus as claimed in claim 92 and after the filtration cycle, adding a quantity of aqueous growth media to the hydrophilic absorbent pad and detecting bacteria in a liquid sample.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 59, 61 - 62 and 112 - 114 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The subject matter or limitations considered to be new matter and lacking sufficient support or written description from the original specification are as follows:

a). In claim 59, the limitations lacking sufficient written description in the original specification are "*the bottom outside wall of the funnel containing a taper that substantially matches the taper of the inside wall of the funnel well of the base with the bottom portion of the*

funnel press fitted into the funnel well of the base so that the taper of the funnel engages the taper of the base, with a sufficient force to prevent accidental disengagement, while still allowing the funnel to be easily removed from the base" and the integral flexible filter seal of the funnel can be compressed a sufficient distance in the vertical direction ..., "*for all values of the outside diameter of the bottom portion of the funnel within its normal manufacturing tolerance range, and for all values of the inside diameter of the inside wall of the funnel well of the base within its normal manufacturing tolerance range thereby causing the funnel to fit into the base plus and minus around the nominal distance from the top of the funnel to the integral flexible filter seal surface of the base, thereby causing the integral flexible filter seal of the funnel to be compressed plus or minus around its nominal height of compression, thereby creating the leak-tight seal*".

b). In claim 61, the limitations "*the filter means is hydrophilic and wherein said absorbent pad is hydrophilic*".

c). In claim 112, the limitation "*the filter seal ring being made from a non-elastomeric material*".

d). Claims 62 and 113 – 114 are dependent claims of claims 61 and 112, respectively, and they also suffer the same defects since they depend therefrom.

All new matter must be canceled in response to this office action.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 58 – 61, 68 and 115 - 118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane (WO 98/32875) in view of Krueger (US 3,295,686).

8. Concerning claim 58, Kane discloses a vacuum filtration apparatus (10) comprising:

- a base (30) containing a funnel well with a filter seal surface (34,35 or 36 capable of being used as another filter seal surface) integral to the base (30) and disposed adjacent to the bottom of the inside wall of the funnel well, with a filter support means (31) integral to the base (30) and disposed in the bottom of the funnel well inside the (filter) seal surface (34, 35 or 36), with an outlet port (38, 39) integral to the base (30) disposed below the filter support means (31) with the outlet port (38) being in direct fluid flow communication with the filter support means (31), as in fig. 4 and pages 4 – 6;

• a funnel (20) with an open top (in the vicinity of 23), the funnel (20) containing an integral filter seal (26) with at least a portion of the integral filter seal disposed below the bottom surface of an outside wall (21) of the funnel (20), as in fig. 3 and pages 4 – 6;

• a filter means (45) disposed in the bottom portion of the funnel well with the outer periphery of the downstream surface of the filter means (45) lying in the same plane as the integral filter seal surface (34) of the base (30) with the bottom portion of the funnel (20) releasably (detachably) attached to the base (30) with the integral filter seal (26) of the funnel inserted into the funnel well of the base (30) a sufficient distance to compress (engage by interference fit) the integral filter seal (26) of the funnel in the vertical direction, thereby releasably sealing the outer periphery of the filter means (45) with a leak-tight seal between the integral filter seal surface (34) of the base (30) and the bottom surface of the compressed integral filter seal (26) of the funnel (20), the releasable seal allowing the filter means (45) to be removed from the apparatus (10) after first removing the funnel (20), as in figs. 2 – 6 and pages 4 – 9.

Kane fails to disclose *the integral filter seal of the funnel being flexible and can be compressed (i.e. compressible) a sufficient distance in the vertical direction.*

7. Krueger teaches a similar vacuum filtration apparatus (5) to that of Kane, the apparatus of Krueger including a funnel (7, 56) with an open top and containing an integral filter seal (31, 13 or 56a) which is flexible (thereby being formed of a relatively soft plastic such as polyethylene, see col. 3, lines 27 - 33), and is compressible/capable of being compressed a sufficient distance in the vertical direction, to releasably seal a filter means (29 or 59) of a

varying thickness with a leak-tight seal between an integral filter seal surface (in the vicinity of lip 13) of a base (15) and the bottom surface of the integral filter seal (13) of the funnel (7), as in fig. 1 and cols. 1 - 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the material of construction of the filter seal of (particularly of the funnel of) the apparatus of Kane, by adding the embodiment taught by Krueger, in order to provide an improved filter seal without using additional seals or gaskets which can compensate for variations in axial length of the seal (in this instance, that of 26 of Kane) and the filter support means and its seal surface (i.e. 31 or 34) as mentioned by Kane in page 9, paragraph 2, at the same time providing a leak-proof seal for the filtration apparatus (see col. 5, lines 8 – 10 of Krueger).

9. With respect to claim 59, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane further discloses the inside wall of the funnel well of the base containing a taper, with the diameter at the top (37) of the inside wall being greater than the diameter at the bottom (36) of the inside wall, with the bottom outside wall of the funnel containing a taper (at the vicinity of 24, 25) that substantially matching the taper of the inside wall of the funnel well of the base, with the bottom portion of the funnel (20) press fitted into the funnel well of the base (30) so that the taper of the funnel (20) engages the taper of the base (30) with a sufficient force to prevent accidental disengagement while still allowing the funnel (20) to be removed from the base (30), as in figs. 2 – 4 and pages 5- 8.

10. Regarding claim 60, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane also discloses the top surface of the integral filter support means (31) of the base (30) being disposed within and below the integral (filter) seal surface (36) of the base, thereby creating a pad well below the integral seal surface (36) of the base, and wherein an absorbent pad (46) is being disposed in the pad well (defined by walls 34 and 31) with the downstream surface of the absorbent pad (46) resting directly on the top surface of the integral filter support means (31) with a portion of the downstream surface of the filter means (45) resting on the upstream surface of the pad (46), as in fig. 2 and page 9.

11. With regards to claim 61, the limitation "sufficiently small pore size" in line 4 is considered to be indefinite because the claim failed to define the values of pore sizes that are considered to be "sufficiently small".

Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane further discloses the filter means (45) being hydrophilic (i.e. can be wetted) and the absorbent pad (46) also being hydrophilic, both capable of being wetted and letting a fluid (liquid) containing microorganisms to flow therethrough, and the filter means (45) being a microporous filter (membrane) which is considered to have sufficiently small pore size (in the micronic size range) capable of removing bacteria (which is a well known microorganism), as in pages 8 – 9.

12. With respect to claim 68, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Krueger also teaches the integral flexible filter seal (end members, 13) of the funnel being made from a relatively soft plastic such as polyethylene, which is a different material from the material (such as hard plastic/acrylic resin) that form the rest of the parts of the funnel (7), as in col. 3 of Krueger.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Kane, by adding the embodiment taught by Krueger, in order to provide an alternative and relatively inexpensive material of construction (i.e. plastic) and design for the funnel and its integral filter seal, which provides not only effective leak-proof seal for the filter within the base and between the funnel and the base, at the same time can compensate for any manufacturing flaws such as differences in axial lengths of the seal surface and the surface to which it would be forming a seal with (seal surfaces 34,35 and 31), as in cols. 1 – 3 of Krueger.

13. Concerning claim 115, Kane discloses a vacuum filtration apparatus comprising:

- a base (30) containing an outlet port (38, 39) capable of being connected to a vacuum source, and further containing a filter seal surface (34, 35, outer edges of 31) disposed above the outlet port (38), as in figures 2 – 4 and pages 4 – 9 and 15 – 16;
- a filter means (45) disposed upstream of the outlet port (38) with the outer periphery of its downstream surface in contact with the filter seal surface (34, 35) of the base (30), as in figs. 2 & 4 – 5;

• a filter support means (31) disposed between the filter means (45) and the outlet port (38) with at least a portion of the downstream side of the filter means (45) disposed inside the filter seal surface (34, 35) supported by the filter support means (31), and

• a funnel (20) with an open top and containing an integral filter seal (26) with at least a portion of the filter seal (26) disposed below the bottom surface of the outside wall of the funnel, and the funnel (20) being attached to the base (30) so that the bottom surface of the filter seal (26) is in contact with the upstream surface of the outer periphery of the filter means (45) and the filter seal (26) is compressed in the vertical direction (i.e. forced into the base 30) thyereby sealing the outer periphery of the filter means (45) with a leak-tight seal between the bottom surface of the filter seal (26) of the funnel and the base (30), the funnel (20) forming a reservoir capable of holding unfiltered liquid upstream of the filter means (45), as in figures 2 – 5 and pages 4 – 16.

Kane fails to disclose *the integral filter seal being flexible and is compressible in the vertical direction and is compressed a sufficient distance in the vertical direction to seal the filter means of varying thickness with a leak-tight seal between the filter seal surface of the base and the flexible seal of the funnel.*

14. Krueger teaches a similar vacuum filtration apparatus (5) to that of Kane, the apparatus of Krueger including a funnel (7, 56) with an open top and containing an integral filter seal (31, 13 or 56a) which is flexible (by being formed of a relatively soft plastic such as polyethylene, see col. 3, lines 27 - 33), and is compressible/capable of being compressed a

sufficient distance in the vertical direction, to releasably seal a filter means (29 or 59) of a varying thickness with a leak-tight seal between an integral filter seal surface (in the vicinity of lip 13) of a base (15) and the bottom surface of the integral filter seal (13) of the funnel (7), as in fig. 1 and cols. 1 - 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the material of construction of the filter seal of (particularly of the funnel of) the apparatus of Kane, by adding the embodiment taught by Krueger, in order to provide an improved filter seal without using additional seals or gaskets which can compensate for variations in axial length of the seal (in this instance, that of 26 of Kane) and the filter support means and its seal surface (i.e. 31 or 34) as mentioned by Kane in page 9, paragraph 2, at the same time providing a leak-proof seal for the filtration apparatus (see col. 5, lines 8 – 10 of Krueger).

15. Regarding claim 116, Kane as modified by Krueger, has taught the limitations of claim 115 above. Krueger also teaches the integral flexible filter seal (end members, 13) of the funnel being made from a relatively soft plastic such as polyethylene, which is a different material from the material (such as hard plastic/acrylic resin) that form the rest of the parts of the funnel (7), as in col. 3 of Krueger.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Kane, by adding the embodiment taught by Krueger, in order to provide an alternative and relatively inexpensive material of construction (i.e. plastic) and design for the

funnel and its integral filter seal, which provides not only effective leak-proof seal for the filter within the base and between the funnel and the base, at the same time can compensate for any manufacturing flaws such as differences in axial lengths of the seal surface and the surface to which it would be forming a seal with (seal surfaces 34,35 and 31), as in cols. 1 – 3 of Krueger.

16. With respect to claim 117, Kane as modified by Krueger, has taught the limitations of claim 115 above. Kane also discloses the attachment between the funnel (20) and the base being a releasable attachment, thereby allowing the filter means (45) to be removed from the apparatus (10) after first removing the funnel (20) from the base, as in pages 4 – 9.

17. With regards to claim 118, Kane as modified by Krueger, has taught the limitations of claim 115 above. Kane further discloses the base containing a pad well, with the side wall (34) of the pad well disposed entirely inside of a (filter) seal surface (36 capable of being used as a filter seal surface if a prefilter is present and disposed at this junction) of the base (30), with the bottom of the pad well disposed entirely below the filter seal surface (36) with an absorbent pad (46) disposed in the pad well with the entire downstream surface thereof resting on the bottom surface of the pad well, and a pad support means (31) with at least a portion of the downstream surface of the filter means (45) disposed inside the filter seal surface (36 and/or 34, 35) of the base and resting on the upstream surface of the absorbent pad (46), thereby making the upstream surface of the absorbent pad (46) the filter support means, as in figures 2 – 5 and pages 4 – 9.

18. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kane and Krueger, as applied to claim 58 above, and further in view of Kenyon (US 3,010,583).

19. Regarding claim 62, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane, as modified by Krueger, fails to teach the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well and greater than the thickness of the hydrophilic filter means.

20. Kenyon teaches a similar vacuum filtration apparatus to that of Kane, the apparatus of Kenyon including a funnel (28, 40) having an open top and a base (24) having a funnel well and an integral filter seal surface (first stepped portion or shoulder onto which the filter film 32 is disposed or located) and an integral filter support means (walls defining channels 48) in the base having a top surface disposed within and below the integral filter seal surface (first stepped/ shoulder portion of wall 36) thereby creating a pad well (second stepped portion or shoulder onto which the porous pad 34 is placed) wherein an absorbent pad (34) is disposed in the pad well resting directly on top of the filter support means, with a portion of the downstream surface of a filter means (32) resting on the upstream surface of the absorbent pad (34), and the filter means (32) and absorbent pad (34) being both hydrophilic (capable of being wetted with a liquid) and the filter means (32) being a *microporous* filter (i.e. *having sufficiently small pore size/micronic pore size and capable of removing bacteria*) and the absorbent pad (34) having a thickness greater than the thickness of the filter means (32), as in fig. 2 and cols. 1 – 3.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Kane, as modified by Krueger, by adding the embodiment (having a thicker absorbent pad than the filter means) taught by Kenyon, in order to provide an alternative and improved design for the filtration apparatus which provides greater cushioning support for the filter means at the same time, a greater surface area for flow, thereby providing a means for slowing down flow of filtered liquid through the filtration apparatus.

21. Although Kane, as modified by Krueger and Kenyon, do not teach the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well, it is considered obvious to one of ordinary skill in the art at the time of the invention, to modify the thickness of the absorbent pad such that it is thicker than the pad well, as a choice of the manufacturer or user of the apparatus to further slow down the flow of filtered fluid through the apparatus and provide greater cushioning support for the filter.

22. Claims 62 - 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane and Krueger, as applied to claim 58 above, and further in view of McNerney et al. (US 6,287,849 B1).

23. Regarding claim 62, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane, as modified by Krueger, fails to teach the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well and greater than the thickness of the hydrophilic filter means.

24. McNerney et al. teach a similar filtration apparatus to that of Kane, the apparatus of McNerney including a funnel (14) and a base (22) containing a funnel well having an integral filter seal surface (48) and a pad well (defined by the recess formed by walls 46 & 48) and a filter means (16) and an absorbent pad (18) providing support to the filter means (16) wherein the filter means (16) and the absorbent pad (18) are both *hydrophilic* (*allows liquid to pass therethrough*) and the absorbent pad (18) having a thickness greater than the thickness of the hydrophilic filter means (16), as in figs. 1 & 6 and cols. 5 – 9.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Kane, as modified by Krueger, by adding the embodiment (having a thicker absorbent pad than the filter means) taught by McNerney et al., in order to provide an alternative and improved design for the filtration apparatus which provides greater cushioning support for the filter means at the same time, a greater surface area for flow, thereby providing a means for slowing down flow of filtered liquid through the filtration apparatus.

25. Although Kane, as modified by Krueger and McNerney et al., do not teach the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well, it is considered obvious to one of ordinary skill in the art at the time of the invention, to modify the thickness of the absorbent pad such that it is thicker than the pad well, as a choice of the manufacturer or user of the apparatus to further slow down the flow of filtered fluid through the apparatus and provide greater cushioning support for the filter.

26. Regarding claim 63, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane, as modified by Krueger, fails to teach a portion of the filter means in contact with the integral filter seal surface being sealed to the seal surface with a non-releasable seal, thereby forming a closed loop.

27. McNerney et al. further teach the filter means (16) having a portion (outer peripheries thereof) which is in contact with the integral filter seal surface (48) being further sealed thereto (by gluing) with a non-releasable seal (glue bond), forming a closed loop, as in col. 6, lines 46 – 48.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the means for sealing or attaching the filter within the apparatus of Kane, as modified by Krueger, by adding the embodiment taught by McNerney et al., in order to provide an alternative and more permanent means of preventing leaking of fluid and bypassing of the filter, thereby preventing contamination of filtered fluid that has passed through the filter.

28. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kane and Krueger, as applied to claim 58 above, and further in view of Zuk, Jr. (US 5,948,246).

29. Concerning claim 63, Kane, as modified by Krueger, has taught the limitations of claim 58 above. Kane, as modified by Krueger, fails to teach a portion of the filter means that is in contact with the integral filter seal surface of the base being further sealed to the filter seal surface with a non-releasable seal, the non-releasable seal forming a closed loop.

30. Zuk, Jr. teaches a similar vacuum filtration apparatus to that of Kane and Krueger, the filtration apparatus (10) of Zuk, Jr. comprising a funnel (20) with an open top and a base (28) containing a funnel well with a filter seal su7rface (70) integral to the base (28, 20) disposed adjacent an inside wall of the funnel well with filter support means (50, 52) integral to the base (28) and an outlet port (at least one of the openings 58) in direct flow communication with the filter support means (50, 52) and a filter means (54) disposed in the bottom portion of the funnel well, the filter means (54) having an outer periphery of its downstream surface lying in the same plane as the integral filter seal surface (70) of the base, wherein a portion of the filter means (54) that is in contact with the integral filter seal surface (70) of the base being further sealed to the filter seal surface (70) with a non-releasable seal (i.e. a heat seal), the non-releasable seal forming a closed loop, as in figs. 1 & 3 – 4 and cols. 3 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filtration apparatus of Kane, as modified by Krueger, by adding the embodiment (of having a non-sealable seal to secure the filter means within the apparatus instead of a releasable one) taught by Zuk, Jr., in order to ensure the prevention of unfiltered liquid from the funnel from leaking (seeping through) about the peripheries of the filter means (i.e. prevent bypassing the filter means), as in col. 3 of Zuk, Jr., thereby preventing contamination of the filtered liquid that already passed through the filter means.

31. Claims 80 – 85, 92 – 94 and 120- 121 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNerney et al. (US 6,287,849 B1).

32. With regards to claim 80, McNerney et al. disclose a vacuum filtration apparatus comprising:

• a base (22) containing a funnel well with a filter seal surface (48) disposed adjacent to the bottom of the inside wall of the funnel well (36), with an absorbent pad support means (20) disposed in the bottom of the funnel well (36) inside of the filter seal surface (48), entirely below the seal surface (48), thereby creating a pad well below the seal surface (48) with an outlet port (32, 50) being in fluid communication with the absorbent pad support means (20);

• a funnel (14, 15) with an open top (at 30) and an open bottom (at 59);

• a *hydrophilic* (*hereby being defined to be capable of being wetted or letting a liquid pass through*) filter means (16) disposed in the bottom portion of the funnel well with the outer periphery of the downstream surface thereof lying in the same plane as the filter seal surface (48), with the outer periphery of the filter means (16) being sealed (by gluing) to the filtration apparatus to prevent bypass of unfiltered fluid around the filter means (16);

• the bottom portion of the funnel (14) releasably attached to the base (22) thereby creating a reservoir for unfiltered fluid above the filter means (16), and further comprising:

• a hydrophilic absorbent pad (18) disposed in the pad well (created between shelves 46 and 48), with its downstream surface resting directly on the top surface of the absorbent pad support means (20), with at least a portion of the downstream surface of the filter means (16) inside the filter seal surface resting on the upstream surface of the absorbent pad (18, particularly when pad 18 has a thickness such that it is flush with the shelf 48, see col.6, lines 35 – 48), and

the thickness of the hydrophilic absorbent pad (18) being sufficiently greater than the thickness of the filter means (16) and thereby capable of having its top swell a distance above the top of the pad well to keep the filter means wrinkle free after being wetted with the fluid being filtered, as in cols. 5 – 6 and fig. 1.

Although McNerney et al. does not disclose the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well, it is considered obvious to one of ordinary skill in the art at the time of the invention, to modify the thickness of the absorbent pad such that it is thicker than the pad well, as a choice of the manufacturer or user of the apparatus to slow down the flow of filtered fluid through the apparatus and provide greater cushioning support for the filter means.

33. With respect to claim 81, McNerney et al. have disclosed the limitations of claim 80 above. McNerney et al. further disclose the filter means (16) being sealed to the filter seal surface (48) of the base (22) with a non-releasable seal (by gluing) which forms a closed loop, as in col. 6, lines 46 – 48.

34. Concerning claims 82 - 84, McNerney et al. have disclosed the limitations of claim 81 above. McNerney et al. further disclose the non-releasable seal being formed by gluing, which could be made (done by a process created) by either a heat seal, an ultrasonic seal or solvent seal. The claims are examples of a product by process claim. The patentability of a product by process claim is based upon the product itself (which in this instance, is the filtration

apparatus having the filter means forming a non-releasable seal with the seal surface of the base), eventhough the claims are limited and defined by process (i.e. a type or process of forming the non-releasable seal, which is by heat sealing, ultrasonic sealing or solvent sealing), and therefore, the product in such a claim is unpatentable if it is the same as, or obvious from the product of the prior art, even if the product of the prior art had been made by a different process. *See* ***In re Thorpe****, et al., No. 85-1913 (11-21-85) 227 USPQ pages 964 – 966.* In this particular instance, the prior art device (taught by McNerney et al.) is the same if not at least an obvious variation of the claimed invention, since the filter means of the vacuum filtration apparatus of McNerney et al. also forms a non-releasable seal with the seal surface of the base by gluing.

35. With respect to claim 85, McNerney et al. have disclosed the limitations of claim 80 above. McNerney et al. further disclose the filter means (16) may be releasably sealed with a compression seal between the bottom surface (59) of the funnel (14, 15) and the filter seal surface (48), as in col. 6, lines 40 – 46.

36. Regarding claim 92, McNerney et al. have disclosed the limitations of claim 80 above. McNerney et al. also disclose the hydrophilic filter means (16) having a sufficiently small pore size (in micronic size range of 0.45 μm and 0.22 μm, capable of removing bacteria from a liquid being filtered and trap the bacteria on the upstream surface of the filter means (16), as in col. 3, lines 30 – 33 and cols. 1 - 10.

37. Concerning claim 93, McNerney et al. have disclosed the limitations of claim 92 above. McNerney et al. further disclose a method step of adding a quantity of aqueous growth media (filtrate fluid plus nutrients/gelling agent) to the absorbent pad and filter means after the filtration cycle has been completed, and the growth media is used to feed the trapped bacteria in the filter means (16) during a subsequent incubation cycle, allowing bacteria to multiply and create colonies on the filter medium (16), thereby making the vacuum filtration apparatus capable of detecting bacteria in a liquid sample, as in cols. 1 – 10.

38. With respect to claim 94, McNerney et al. have disclosed the limitations of claim 80 above. McNerney et al. also disclose the outlet port (32) of the base being capable of directly connected (directly connectable) to a vacuum source, as in col. 7 and fig. 1.

39. Regarding claim 120, McNerney et al. disclose a vacuum filtration apparatus comprising:

- a base (22) containing an outlet port (32, 50) capable of being connected to a vacuum source, a filter seal surface (48) disposed above the outlet port (32) and a pad well (defined between shelves 48 & 46) containing a substantially vertical side wall and a bottom wall (46), with the boundary of the top of the sidewall of the pad well being coincident with an inner boundary of the filter seal surface (48) with the bottom surface (46) of the pad well substantially parallel to the filter seal surface (48) and disposed entirely below the seal surface (48);

• a *hydrophilic* (*hereby being defined to be capable of being wetted or letting a liquid pass through*) absorbent pad (18) disposed in the pad well (created between shelves 46 and 48), with its downstream surface resting directly on the bottom surface (46) of the pad well;

• a *hydrophilic* (*see definition used above)* filter means (16) with the outer periphery of the downstream surface thereof lying in the same plane as the filter seal surface (48), with the outer periphery of the filter means (16) being sealed (by gluing) to the filtration apparatus to prevent bypass of unfiltered fluid around the filter means (16), with at least a portion of the filter means (16) disposed inside the filter seal surface (48);

• a funnel (14, 15) with an open top (at 30) attached to the base (22) and forming a reservoir for holding unfiltered fluid above (upstream of) the filter means (16), whereby unfiltered fluid from the funnel (14, 15) could be drawn first through the filter means (16) and then through the absorbent pad (18) and then into the outlet port by application of vacuum at the outlet port;

• the thickness of the absorbent pad (18) being sufficiently greater than the filter means (16), thereby making it capable of swelling a sufficient distance above the top of the pad well to keep the filter means wrinkle free after it has been wetted or a fluid has passed therethrough as in cols. 1 – 6 and fig. 1.

Although McNerney et al. does not disclose the thickness of the hydrophilic absorbent pad being sufficiently greater than the height of the pad well, it is considered obvious to one of ordinary skill in the art at the time of the invention, to modify the thickness of the absorbent pad such that it is thicker than the pad well, as a choice of the manufacturer or user of the apparatus

to slow down the flow of filtered fluid through the apparatus and provide greater cushioning support for the filter means.

40. With regards to claim 121, McNerney et al. have taught the limitations of claim 120 above. McNerney et al. further disclose the bottom wall (46) of the pad well further containing a pad underdrain (in the form of a support 20), wherein the pad underdrain (20) directs flow of filtered fluid from the absorbent pad (18) to the outlet port (50, 32), thereby reducing pressure drop across the absorbent pad, as in fig.1 and cols. 1 – 6.

41. Claims 106 and 109 – 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane in view of Kenyon (US 3,010, 583).

42. With respect to claim 106, Kane discloses a vacuum filtration apparatus (10) comprising:

- a base (30) containing a funnel well with a first (filter) seal surface (36 capable of being used as a filter seal surface) disposed adjacent to the bottom of the inside wall of the funnel well, with a filter support means (31) disposed in the bottom of the funnel well inside of and below the first seal surface (36), thereby creating a pad well inside of and below the first seal surface (36) with the filter support means (31) containing a second filter seal surface (34, 35) at its outer periphery with an outlet port (38, 39) disposed below the filter support means (31) with

the outlet port (38) being in fluid flow communication with the filter support means (31), as in fig. 4 and pages 4 – 6;

- a funnel (20) with an open top (in the vicinity of 23), with the bottom portion thereof releasably attached from the base (30), as in fig. 3 and pages 4 – 6;

- a (second) filter means (31 in the form of a mesh) disposed in the pad well (defined by wall 34, 35 and bottom of the base) with the entire downstream surface thereof in contact with the filter support means (bottom or 31 of base) and the downstream portion of the outer periphery of the second filter means (mesh 31) being in contact with the second filter seal surface (34),

- an absorbent pad (46) disposed in the pad well with the outer boundary thereof disposed entirely within the boundary of the pad well with the downstream surface of the absorbent pad (46) resting on the upstream surface of the second filter means (mesh 31), as in figure 2 and pages 4 - 9; and

- a first filter means (45) disposed in the bottom portion of the funnel well having at least a portion of its downstream surface lying within the boundary of the pad well and resting on the upstream surface of the absorbent pad (46), as in figures 2 – 4 and pages 4 – 9.

Kane fails to disclose *the first filter means having the outer periphery of its downstream surface lying in the same plane as the plane of the first filter seal surface of the base, with its outer periphery sealed to the base to prevent bypass around the first filter means.*

43. Kenyon teaches a similar vacuum filtration apparatus to that of Kane, the apparatus (10) of Kenyon including a base (24) containing a funnel well and having a first filter seal surface (first stepped portion or shoulder radially extending inward of the wall 36) disposed adjacent to the bottom of the inside wall (36) of the funnel well with a filter support means (formed by walls of radial and annular channels 48) disposed on the bottom of the funnel well inside of and below the first filter seal surface thereby creating a pad well, and the filter support means containing a second filter seal surface (second stepped portion or shoulder formed on wall 36 below the first stepped portion or shoulder, also extending inwardly) and an outlet port (26, 46) below the filter support means in fluid flow communication with the filter support means, as in fig. 2; and further comprising a funnel (28) with an open top and further having at least a first filter means (32) disposed in the bottom portion of the funnel well with the outer periphery of the downstream surface of the first filter means (32) lying in the same plane as the plane of the first filter seal surface of the base (24) and with its outer periphery sealed (by having its edges being sandwiched between the funnel 28 and the base 24) to the base to prevent bypass around the first filter means, as in figure 2 and cols. 1 - 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filtration apparatus of Kane, by adding the embodiment (of having a first filter means disposed on the first filter seal surface and sealed thereto) taught by Kenyon, in order to provide an improved filtration apparatus having a first filter (or a prefilter) means which provides not only a greater surface area for (prefiltering) filtering, at the same time prevent bypassing of the first filter means, thereby increasing the useful life of the apparatus.

44. Concerning claim 109, Kane, as modified by Kenyon, has taught the limitations of claim 106 above. Kane also discloses the first seal surface (36) being an integral part of the base, the filter support means (31) could also be an integral part of the base (30) and the outlet port (38) being an integral part of the base, as in figures 4 – 5 and pages 4 – 8.

45. With regards to claim 110, Kane, as modified by Kenyon, has taught the limitations of claim 109 above. Kane also discloses the releasable attachment between the base (30) and the funnel (20) being an interference fit between the outer wall of the funnel (20) and an inside wall of the base, as in figure 2 and pages 6 – 7.

Allowable Subject Matter

46. Claims 69 – 79, 95 – 105, 112 – 114 and 119 contain allowable subject matter.

47. Claims 64 – 67, 86 – 91, 107 – 108 and 111 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

48. The following is a statement of reasons for the indication of allowable subject matter: the closest prior art include Kane (WO 875), Krueger (686), Zuk, Jr. (246), McNerney et al. (US 849) and Kenyon (US 583). However, none of these prior art and those searched, have disclosed or rendered obvious a vacuum filtration apparatus having the combination of limitations recited in claims 58 and 64 including the limitation of the lid clamp tabs containing a sloped surface that tapers outward from the top thereof to the bottom portion thereof so that the minimum diameter of the sloped surface thereof occurs at the top of the sloped surface and the maximum diameter of the sloped surface occurs at the bottom thereof, and a vacuum filtration apparatus having the combination of limitations recited in claims 80 and 86 including the limitation of the lid clamp tabs containing a sloped surface that tapers outward from the top thereof to the bottom portion thereof so that the minimum diameter of the sloped surface thereof occurs at the top of the sloped surface and the maximum diameter of the sloped surface occurs at the bottom thereof, and a vacuum filtration apparatus having the combination of limitations recited in claims 95 and 119 having the limitation of the lid clamp tabs containing a sloped surface that tapers outward from the top thereof to the bottom portion thereof so that the minimum diameter of the sloped surface thereof occurs at the top of the sloped surface and the maximum diameter of the sloped surface occurs at the bottom thereof, and a vacuum filtration apparatus having the combination of limitations recited in base claim 69 having the limitation of the one or more integral flexible funnel seal rings protruding from the bottom portion of the outside wall of the funnel above the bottom surface of the funnel and the one or more funnel seal rings being forced to deflect upward as they are inserted into the funnel well of the base to create an interference fit between an end

wall of the upwardly deflected one or more integral flexible funnel seal rings and the inside wall of the funnel well of the base, and a vacuum filtration apparatus having the combination of limitations recited in base claim 112 having the limitation of a filter seal ring comprising an annular ring containing a substantially horizontal top surface and a substantially horizontal bottom surface and an outer end surface extending from the outer edge of the top surface to the outer edge of the bottom surface with a maximum diameter of the outer end surface of the filter seal ring being greater than the inside diameter of the funnel well and the seal ring being made from a non-elastomeric material, and a vacuum filtration apparatus having the combination of limitations recited in claims 106 and 107 having the limitation of the pore size of the absorbent pad being less than the pore size of the first and second filter means.

Response to Arguments and Amendments

49. Applicant's arguments and amendments with respect to claims 58 – 63, 68, 80 – 85, 92 – 94, 106, 109 – 110, 115 – 118 and 120 - 121 have been considered but are moot in view of the new grounds of rejections set forth above.

50. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

51. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (571) 272-1144. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

52. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

53. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.S.O.

JOSEPH DRODGE
PRIMARY EXAMINER